

BRIEF SUMMARY: CARB Phase 3 Gasoline Specifications and Test Methods

p. 1, revised 10/13/05

This summary is not a legal document and is not intended to be used in lieu of the regulations but as an aid to understanding the specifications of the fuels' regulated properties.

CCR Section	Gasoline Parameter	Test Method	Flat	Averaging (DAL)	Cap	CARBOB Cap Limits	Units	Reproducibility
2262 & 2262.3	Aromatic HC Content	ASTM D5580-00	25.0 ^a	22.0	35.0	38.7	v%	1.4
2262 & 2262.3	Benzene Content	ASTM D5580-00	0.80 ^a	0.70	1.10	1.22	v%	0.1409(x) ^{1.133}
2262 & 2262.3	Distillation, T50	ASTM D86-99 ^{ae1}	213 ^a	203	220	(RVP) 232 ^b (non-RVP) 237 ^b	° F	variable
	Distillation, T90		305 ^a	295	330	335		
2262 & 2262.5b	Ethanol Content	ASTM D4815-99	10.0	cannot average	10.0	not applicable	v%	0.23(x) ^{0.57}
2262 & 2262.6a	MTBE Content	ASTM D4815-99	cannot add ^c 0.30 0.15 ^d 0.05 ^e	cannot average	0.30 0.15 ^{d,f} 0.05 ^{e,f}	not applicable	v%	0.12(x) ^{0.67}
2262 & 2262.3	Olefin Content	ASTM D6550-00 (modified)	6.0	4.0	10.0	11.1	v%	0.32(x) ^{0.5 g}
2262 & 2262.5	Oxygen Content	ASTM D4815-99 Equiv: GC/FTIR	1.8 to 2.2	cannot average	0 to 3.5 ^h 1.8 ⁱ to 3.5 ^h	not applicable	w%	ETOH: 0.23(x) ^{0.57} m%
2262 & 2262.6c	Oxygen Content (total, other than EtOH & MTBE)	ASTM D4815-99	cannot add 0.06	cannot average	0.06	not applicable	w%	variable
2262 & 2262.4	Reid Vapor Pressure ^{j,k}	ASTM D323-58 or 13 CCR Section 2297	7.00 6.90 ^m	cannot average	6.40 - 7.20	5.99	psi	0.21
2262 & 2262.3	Sulfur Content	for >10 ppm: ASTM D2622-94 (modified) or ASTM D5453-93	20	15	60 30 ^{d,f}	66 32 ^{d,f}	ppm	for 2622: for S between 10 to 30 ppm: 40.5% (x)
		for 2622: for S > 30 ppm 19.2% (x)						
		for 5453: 0.2217(x) ^{0.92}						
2257	Deposit Control Additive	Specifications are listed in the individual deposit control additive certifications.						
2253.4	Lead Content	ASTM D3237-79	0.05	cannot average	0.05	0.05	gm/gal	0.01
2254	Manganese Content	None specified, (using ASTM D2622-94)	cannot add	cannot average	cannot add	cannot add	ppm	not applicable
2253.4	Phosphorus Content	ASTM D3231-73	0.005	cannot average	0.005	0.005	gm/gal	0.0005

See Section 2264 on DAL averaging, Section 2265 on predictive model formulations, and Section 2266 on certified formulations. Note: for reproducibility, x = test result.

a = small refiner limits are 35.0 for aromatic HC, 1.00 for benzene, 220 for T50, 312 for T90. h = cap limit is 3.7 w% if oxygen is > 3.5 w% **and** ethanol content is ≤ 10 v%.

b = limits for RVP and non-RVP season gasoline.

i = 1.8% winter minimum applies Nov. 1 to Feb. 29 in the South Coast Area and Imperial County.

c = a California production facility may use a supplied blending component with an MTBE content of 0.60 % volume or less in the production of California gasoline.

d = applies on December 31, 2005.

j = beginning and ending at different times of the year according to air basin (generally March through October).

e = applies on July 1, 2007.

k = for CARBOB final blends, a minimum RVP limit applies for producers and importers during non-RVP season.

f = phase-in periods apply at facilities downstream from import or production facilities.

m = applies when evap element of predictive model is used; RVP cap limit = 7.20.

g = x is between 0.3 and 25 m% olefin. Conversion from m% to v% is: (v% olefin) = (0.857)(m% olefin).

underline = current CARB enforcement test method.

BRIEF SUMMARY: CARB Phase 3 Gasoline Specifications and Test Methods

p. 2, revised 10/13/05

This summary is not a legal document and is not intended to be used in lieu of the regulations but as an aid to understanding the specifications of the fuels' regulated properties.

CCR Section	Parameter	Test Method	Flat	Averaging (DAL)	Cap	CARBOB Cap Limits	Units	Reproducibility
Denatured Ethanol Standards*								
2262.9	Aromatic Content (ETOH)	None specified	1.7				v%	
2262.9	Benzene Content (ETOH)	None specified	0.06				v%	
2262.9	Olefin Content (ETOH)	None specified	0.5				v%	
2262.9	Sulfur Content (ETOH)	<u>ASTM D5453-93</u>	10				ppm	
*See Section 2262.9(a)(1)(B) for additional standards required based on ASTM D 4806-99.								
Denaturant Standards								
2262.9	Aromatic (in denaturant)	ASTM D5580-00	35.0				v%	
2262.9	Benzene (in denaturant)	ASTM D5580-00	1.10				v%	
2262.9	Olefin (in denaturant)	<u>ASTM D6550-00 (modified)</u>	10.0				v%	

Note: underline = current CARB enforcement test method.